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Towards Sustainable Agriculture through Solar Drying Technologies

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Abstract

Alternative sustainable technologies can help farmers to improve their well-being through higher agricultural productivity. Post harvest operations plays a major role. One of the major concerns in post harvest processes is losses due to various practices. One of major operation is drying of agro/food materials before consumption. Presently open sun drying or dryers fired with imported oil are in use. One of the alternative method is to use solar energy. It can be utilized efficiently and effectively as a renewable energy source to preserve the food products during drying process. Solar driers eliminates the dust and dirt, prevent destroying of the heat-sensitive vitamins by UV rays, can achieve uniform drying conditions with design modifications, vaporizing the volatile compounds of the products and does not contribute to the green house gas emission. National and international market demand for the solar dried food products can be generated. It makes a significant contribution to reducing poverty and improving rural livelihood will achieve sustainability, by building the capacity of the farmers and their communities.

Introduction

● The shares of GDP from the agriculture sector- 12 %
   (2007, Central Bank Report)
● Improve farmers’ wellbeing by alternative sustainable technologies through higher agricultural productivity.
● Agriculture was the predominant sector in this economy & contributed to 80% of total household income of an average family.

Most of the Agro industry based on post harvest operations
● One of major operation is drying of agro/food materials
● Presently open sun drying or dryers fired with imported oil are in use.

Post harvest losses

Perishable (Fruit & vegetable) 50%
Durables (Grains & legumes) 25%

Advantages

● More hygienic, protect from dust, insect, etc
● Lower cost
● Much faster
● Retained more nutrient
● Quality in term of colour & taste
● No green house gas emission

Potential

● National & international market demand
● More attractive income from their products.
● Contribution to reducing poverty
● Improving rural livelihood
● Achieve sustainability,